```
=> d his

     (FILE 'HOME' ENTERED AT 13:45:24 ON 22 MAR 2005)

     FILE 'HCAPLUS' ENTERED AT 13:47:35 ON 22 MAR 2005
L1            1 US20020035071/PN

     FILE 'REGISTRY' ENTERED AT 13:48:08 ON 22 MAR 2005

     FILE 'HCAPLUS' ENTERED AT 13:48:11 ON 22 MAR 2005
L2              TRA L1 1- RN :        5 TERMS

     FILE 'REGISTRY' ENTERED AT 13:48:11 ON 22 MAR 2005
L3            5 SEA L2

     FILE 'WPIX' ENTERED AT 13:48:25 ON 22 MAR 2005
L4            1 US20020035071/PN

=> b hcap
FILE 'HCAPLUS' ENTERED AT 13:48:46 ON 22 MAR 2005
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FILE COVERS 1907 - 22 Mar 2005  VOL 142 ISS 13
FILE LAST UPDATED: 21 Mar 2005  (20050321/ED)

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.


=> d all l1

L1   ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2005 ACS on STN
AN   2002:221205  HCAPLUS
DN   136:226811
ED   Entered STN:  22 Mar 2002
TI   Mimicking the metabolic effects of caloric restriction by administration
     of glucose antimetabolites
IN   Pitha, Josef; Roth, George
PA   USA
SO   U.S. Pat. Appl. Publ., 4 pp., Cont.-in-part of U. S. Ser. No. 889,877,
     abandoned.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  A61K031-70
NCL  514023000
CC   1-11 (Pharmacology)
     Section cross-reference(s): 17
```

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002035071	A1	20020321	US 2001-950052	20010912 <--
PRAI	US 1997-889877	B2	19970708		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2002035071	ICM	A61K031-70
	NCL	514023000
US 2002035071	ECLA	A61K031/70B <--

AB A method of obtaining beneficial biol. results associated with caloric restriction may be gained by administration of a composition containing at least one active agent which blocks metabolism of glucose as a source of energy in cells in glucose metabolism blocking effective amts. to an animal in need thereof.

ST caloric restriction glucose antimetabolite anhydrosugar

IT Canis familiaris
Hypothermia
(mimicking metabolic effects of caloric restriction by administration of glucose antimetabolites)

IT 50-99-7, D-Glucose, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(antimetabolites; mimicking metabolic effects of caloric restriction by administration of glucose antimetabolites)

IT 146-72-5, 3-O-Methylglucose 654-29-5, Mannoheptulose 20408-97-3, 5-Thio-D-glucose 41107-82-8, 2,5-Anhydro-D-mannitol
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(mimicking metabolic effects of caloric restriction by administration of glucose antimetabolites)

=> b reg
FILE 'REGISTRY' ENTERED AT 13:48:51 ON 22 MAR 2005

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 20 MAR 2005 HIGHEST RN 845957-95-1
DICTIONARY FILE UPDATES: 20 MAR 2005 HIGHEST RN 845957-95-1

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

****
* *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
* *
****

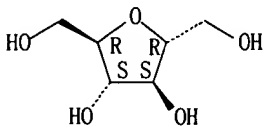
Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> d ide l3 tot

L3 ANSWER 1 OF 5 REGISTRY COPYRIGHT 2005 ACS on STN
RN 41107-82-8 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-Mannitol, 2,5-anhydro- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 2,5-Anhydro-D-mannitol
CN NSC 129241
FS STEREOSEARCH
DR 50896-35-0
MF C6 H12 O5
CI COM
LC STN Files: ADISINSIGHT, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CANCERLIT, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CIN, CSCHEM, MEDLINE, MSDS-OHS, PROMT, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.

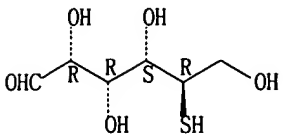


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

145 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
145 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 2 OF 5 REGISTRY COPYRIGHT 2005 ACS on STN
RN 20408-97-3 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-Glucose, 5-thio- (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 5-Thio-D-glucose
CN 5-Thioglucose
CN NSC 204984
CN Thioglucose
FS STEREOSEARCH
DR 119663-50-2
MF C6 H12 O5 S
LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CSCHEM, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, NIOSHTIC, PROMT, RTECS*, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry. Rotation (+).

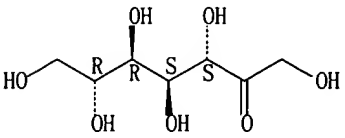


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

249 REFERENCES IN FILE CA (1907 TO DATE)
8 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
249 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 3 OF 5 REGISTRY COPYRIGHT 2005 ACS on STN
RN 654-29-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN manno-2-Heptulose (8CI, 9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN manno-Heptulose (6CI, 7CI)
OTHER NAMES:
CN Mannoheptulose
CN Mannoketoheptose
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CHEMINFORMRX, DDFU, DRUGU, EMBASE, MEDLINE, NAPRALERT, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)

Relative stereochemistry.



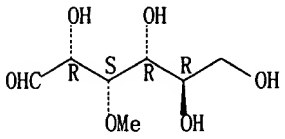
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

184 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
184 REFERENCES IN FILE CAPLUS (1907 TO DATE)
26 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 4 OF 5 REGISTRY COPYRIGHT 2005 ACS on STN
RN 146-72-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-Glucose, 3-O-methyl- (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN 3-O-Methyl-D-glucose
CN 3-O-Methylglucose
CN NSC 170119
FS STEREOSEARCH
DR 27948-57-8
MF C7 H14 O6
CI COM

LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CSCHEM, DDFU, DETHERM*, DRUGU, EMBASE, IPA, MEDLINE, NIOSHTIC, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



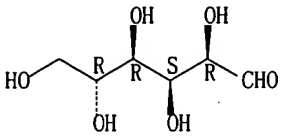
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1813 REFERENCES IN FILE CA (1907 TO DATE)
7 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1813 REFERENCES IN FILE CAPLUS (1907 TO DATE)
30 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 5 OF 5 REGISTRY COPYRIGHT 2005 ACS on STN
RN 50-99-7 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-Glucose (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN (+)-Glucose
CN Anhydrous dextrose
CN Cartose
CN Cerelose
CN Cerelose 2001
CN Clearsweet 95
CN Clintose L
CN Corn sugar
CN CPC hydrate
CN D(+)-Glucose
CN Dextropur
CN Dextrose
CN Dextrosol
CN Glucodin
CN Glucolin
CN Glucose
CN Glucosteril
CN Goldsugar
CN Grape sugar
CN Maxim Energy Gel
CN Meritose
CN Meritose 200
CN Roferose ST
CN Staleydex 111
CN Staleydex 130
CN Staleydex 333
CN Staleydex 95M
CN Sugar, grape
CN Tabfine 097(HS)
CN Vadex
FS STEREOSEARCH

DR 8012-24-6, 8030-23-7, 162222-91-5, 165659-51-8, 50933-92-1, 80206-31-1
MF C6 H12 O6
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSCOSEARCH, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA, PROMT, PS, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

175169 REFERENCES IN FILE CA (1907 TO DATE)
2481 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
175441 REFERENCES IN FILE CAPLUS (1907 TO DATE)
14 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> b wpix

FILE 'WPIX' ENTERED AT 13:49:04 ON 22 MAR 2005
COPYRIGHT (C) 2005 THE THOMSON CORPORATION

FILE LAST UPDATED: 21 MAR 2005 <20050321/UP>
MOST RECENT DERWENT UPDATE: 200519 <200519/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE, PLEASE VISIT:
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>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE http://thomsonderwent.com/coverage/latestupdates/ <<<

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER GUIDES, PLEASE VISIT:
http://thomsonderwent.com/support/userguides/ <<<

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FOR FURTHER DETAILS: http://www.thomsonderwent.com/dwpifv <<<

>>> THE CPI AND EPI MANUAL CODES HAVE BEEN REVISED FROM UPDATE 200501.
PLEASE CHECK:
http://thomsonderwent.com/support/dwpiref/reftools/classification/code-revision/
FOR DETAILS. <<<

=> d all l4

L4 ANSWER 1 OF 1 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN
AN 2002-462572 [49] WPIX
DNC C2002-131354
TI Method of obtaining beneficial biological results associated with calorie restriction, useful in treatment of trauma, by administering composition comprising agent which blocks metabolism of glucose.
DC B03
IN PITHA, J; ROTH, G
PA (PITH-I) PITHA J; (ROTH-I) ROTH G
CYC 1
PI US 2002035071 A1 20020321 (200249)* 4 A61K031-70 <--
ADT US 2002035071 A1 CIP of US 1997-889877 19970708, US 2001-950052 20010912
PRAI US 2001-950052 20010912; US 1997-889877 19970708
IC ICM A61K031-70
AB US2002035071 A UPAB: 20020802
NOVELTY - Method of obtaining beneficial biological results associated with calorie restriction by administering a composition comprising at least one active agent (I), which blocks metabolism of glucose as a source of energy in cells to an animal.

ACTIVITY - Anorectic; Tranquilizer; Vulnerary.

MECHANISM OF ACTION - Glucose metabolism blocker; Glucokinase inhibitor; Aldolase inhibitor; Hexokinase inhibitor.

USE - For obtaining beneficial biological results associated with calorie restriction, for lowering the temperature in body tissue (both claimed) useful in the treatment of trauma, and for inducing weight loss.

The use of mannoheptulose (A), obtained from avocados, for the purposes of obtaining benefits associated with inhibiting metabolism of glucose was tested in beagle dogs. A total of 12 beagles were utilized for the study and were fed a standard commercial diet throughout the study period. Fasting blood samples were drawn 7, 6, 4 and 2 days prior to administration of (A), in the form of a freeze-dried avocado meal containing (A) (10 - 12%). The preparation was adjusted to provide doses of (A) in amounts of 2, 20 and 200 mg/kg body weight (MH-2, MH-20, MH-200, respectively). Fasting blood samples were collected 1,3, 5 and 7 days after initiation of the administration of (A). It was observed that the insulin levels were lowered by up to 35% in dogs who had received the avocado meal, compared to the dogs on similar diet without the meal. The changes were similar to the decreases found in mammals on caloric restricted diets.

ADVANTAGE - The composition blocks the use of glucose as a source of energy in cells in amounts to lower tissue glucose level and decrease plasma insulin levels in a non-diabetic animal. The composition provides beneficial physiological regulation of biological processes while allowing animals to avoid undesirable effects of caloric restriction and provides improved health benefits. 5-Thioglucose is excreted in urine, and thus is advantageous to use for chronic administration over 2-deoxy-D-glucose. Mannoheptulose is also a safe alternative to 2-deoxy-D-glucose, as is free of the unwanted side effects seen with the long-term administration of 2-deoxy-D-glucose. 1,5-Anhydro-D-glucitol is non-reducing and thus cannot be incorporated into glycolipids, glycoproteins and glycogen. Its effects are specific to glycolysis and does not affect other metabolic processes or exert toxicity of the glucose antimetabolites. 2,5-Anhydro-D-mannitol and 2,5-anhydro-glucitol are capable of blocking the utilization of both glucose and fructose.

Dwg.0/0
FS CPI
FA AB; DCN
MC CPI: B04-D01; B07-A02; B10-A07; B14-D06; B14-D08; B14-E12; B14-L06;

B14-N17B; B14-S07; B14-S12

=> b home
FILE 'HOME' ENTERED AT 13:49:11 ON 22 MAR 2005

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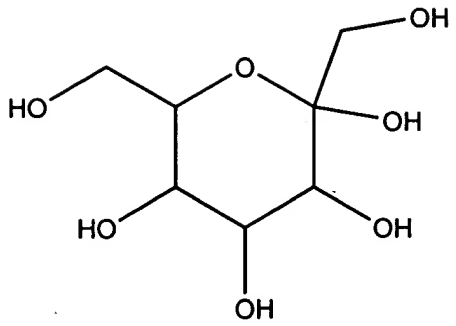

2,6-Bis-hydroxymethyl-tetrahydro-pyran-2,3,4,5-tetraol

$C_7H_{14}O_7$

```
=> b reg
FILE 'REGISTRY' ENTERED AT 14:09:37 ON 22 MAR 2005
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STRUCTURE FILE UPDATES:   21 MAR 2005  HIGHEST RN 846537-87-9
DICTIONARY FILE UPDATES:  21 MAR 2005  HIGHEST RN 846537-87-9

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

**********************************************************************
*                                                                    *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,    *
* effective March 20, 2005.  A new display format, IDERL, is now     *
* available and contains the CA role and document type information.  *
*                                                                    *
**********************************************************************

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> d ide l15 tot

L15  ANSWER 1 OF 43  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   357341-90-3  REGISTRY
ED   Entered STN:  18 Sep 2001
CN   D-altro-2-Heptulose-7-13C (9CI)  (CA INDEX NAME)
FS   STEREOSEARCH
MF   C7 H14 O7
SR   CA
LC   STN Files:   CA, CAPLUS

Absolute stereochemistry.
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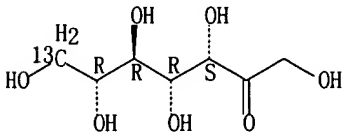


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                1 REFERENCES IN FILE CA (1907 TO DATE)
                1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15  ANSWER 2 OF 43  REGISTRY  COPYRIGHT 2005 ACS on STN
RN   357341-89-0  REGISTRY
ED   Entered STN:  18 Sep 2001
CN   D-altro-2-Heptulose-5-13C (9CI)  (CA INDEX NAME)
FS   STEREOSEARCH
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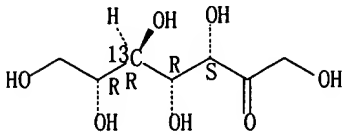
MF C7 H14 O7
SR CA
LC STN Files: CA, CAPLUS

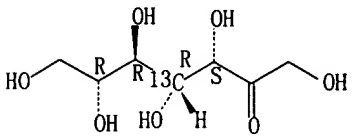
Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 3 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 357341-88-9 REGISTRY
ED Entered STN: 18 Sep 2001
CN D-altro-2-Heptulose-4-13C (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
SR CA
LC STN Files: CA, CAPLUS

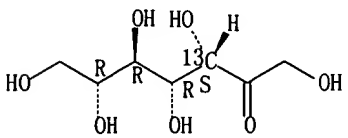
Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 4 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 357341-82-3 REGISTRY
ED Entered STN: 18 Sep 2001
CN D-altro-2-Heptulose-3-13C (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.

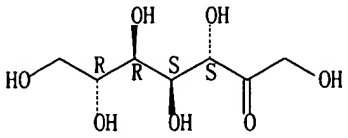


1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 5 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 333717-11-6 REGISTRY
ED Entered STN: 01 May 2001

CN D-manno-2-Heptulose, labeled with tritium (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER
IL XH-3

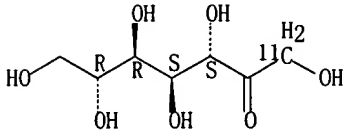
Absolute stereochemistry.



4 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 6 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 333717-10-5 REGISTRY
ED Entered STN: 01 May 2001
CN D-manno-2-Heptulose-1-11C (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
SR CA
LC STN Files: CA, CAPLUS

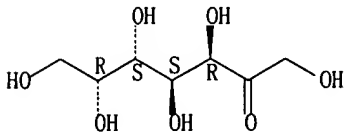
Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 7 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 278184-47-7 REGISTRY
ED Entered STN: 18 Jul 2000
CN galacto-2-Heptulose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Relative stereochemistry.

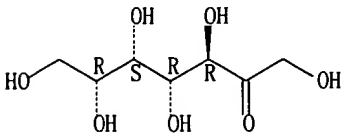


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 8 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 278184-46-6 REGISTRY
ED Entered STN: 18 Jul 2000
CN gulo-2-Heptulose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
SR CA
LC STN Files: CA, CAPLUS, USPATFULL

Relative stereochemistry.

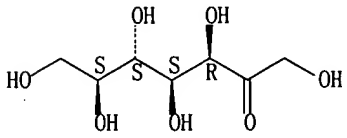


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 9 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 194878-02-9 REGISTRY
ED Entered STN: 03 Oct 1997
CN L-altro-2-Heptulose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
CI COM
SR CA

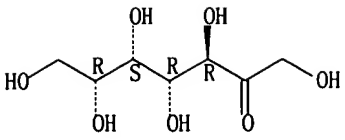
Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L15 ANSWER 10 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 158647-12-2 REGISTRY
ED Entered STN: 01 Nov 1994
CN D-gulo-2-Heptulose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
SR CA
LC STN Files: CA, CAPLUS, CASREACT

Absolute stereochemistry.

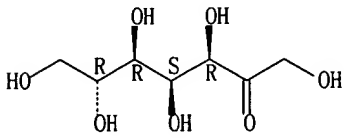


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 11 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 98524-02-8 REGISTRY
ED Entered STN: 12 Oct 1985
CN gluco-2-Heptulose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN gluco-Heptulose (6CI)
FS STEREOSEARCH
MF C7 H14 O7
SR CAOLD
LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CHEMINFORMRX, USPATFULL
(*File contains numerically searchable property data)

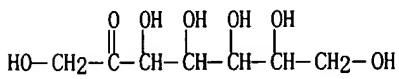
Relative stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)
7 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 12 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 79465-26-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN 2-Heptulose (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C7 H14 O7
CI COM
LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, CHEMINFORMRX, USPATFULL
(*File contains numerically searchable property data)

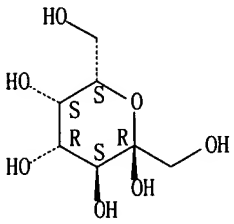


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 13 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 60426-79-1 REGISTRY
ED Entered STN: 16 Nov 1984
CN .alpha.-L-galacto-2-Heptulopyranose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.

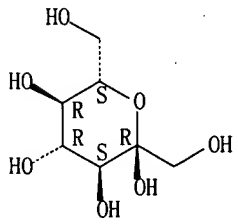


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 14 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 60426-78-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN .alpha.-L-gluco-2-Heptulopyranose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.



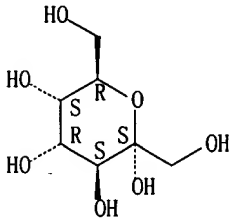
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 15 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 60426-77-9 REGISTRY
ED Entered STN: 16 Nov 1984

CN .alpha.-D-altro-2-Heptulopyranose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX, GMELIN*
(*File contains numerically searchable property data)

Absolute stereochemistry.

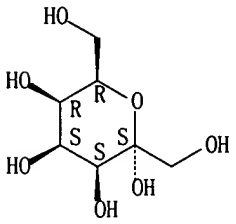


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 16 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 60426-76-8 REGISTRY
ED Entered STN: 16 Nov 1984
CN .alpha.-D-talo-2-Heptulopyranose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX, GMELIN*
(*File contains numerically searchable property data)

Absolute stereochemistry.

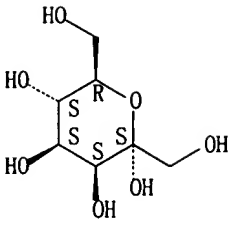


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 17 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 60426-75-7 REGISTRY
ED Entered STN: 16 Nov 1984
CN .alpha.-D-manno-2-Heptulopyranose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX, GMELIN*
(*File contains numerically searchable property data)

Absolute stereochemistry.

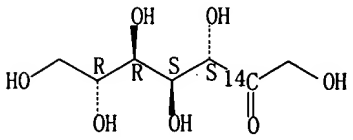


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 18 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 40616-01-1 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-manno-2-Heptulose-2-14C (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)

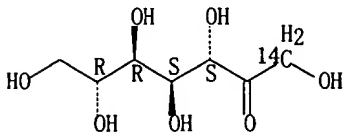
Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 19 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 40616-00-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-manno-2-Heptulose-1-14C (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)

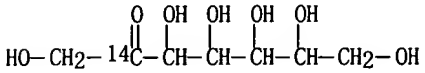
Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

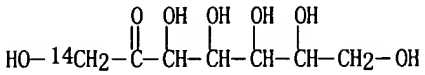
L15 ANSWER 20 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 40615-99-4 REGISTRY

ED Entered STN: 16 Nov 1984
CN D-altro-2-Heptulose-2-14C (9CI) (CA INDEX NAME)
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

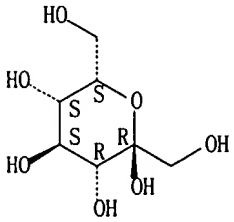
L15 ANSWER 21 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 40615-98-3 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-altro-2-Heptulose-1-14C (9CI) (CA INDEX NAME)
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 22 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 36660-76-1 REGISTRY
ED Entered STN: 16 Nov 1984
CN .alpha.-L-ido-2-Heptulopyranose (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Kamusol
FS STEREOSEARCH
DR 11090-72-5
MF C7 H14 O7
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAPLUS, CHEMINFORMRX, GMELIN*
(*File contains numerically searchable property data)

Absolute stereochemistry.

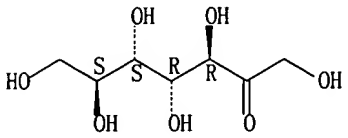


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 23 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 32852-07-6 REGISTRY
ED Entered STN: 16 Nov 1984
CN L-manno-2-Heptulose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN L-manno-Heptulose (8CI)
OTHER NAMES:
CN L-Mannoheptulose
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.

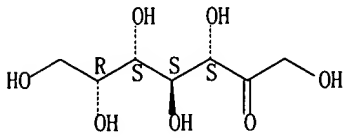


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 24 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 31297-62-8 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-talo-2-Heptulose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN D-talo-Heptulose (6CI)
OTHER NAMES:
CN talo-Heptulose
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CHEMINFORMRX, USPATFULL
(*File contains numerically searchable property data)

Absolute stereochemistry.



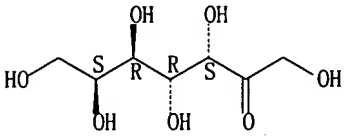
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 25 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 29325-35-7 REGISTRY
ED Entered STN: 16 Nov 1984

CN L-galacto-2-Heptulose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN L-galacto-Heptulose (7CI, 8CI)
CN Perseulose (6CI)
OTHER NAMES:
CN L-Galactoheptulose
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.

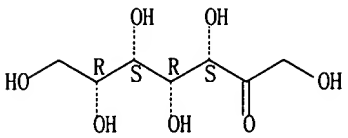


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

34 REFERENCES IN FILE CA (1907 TO DATE)
34 REFERENCES IN FILE CAPLUS (1907 TO DATE)
13 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 26 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 22224-54-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-ido-2-Heptulose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN D-ido-Heptulose (7CI, 8CI)
OTHER NAMES:
CN D-Idoheptulose
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.



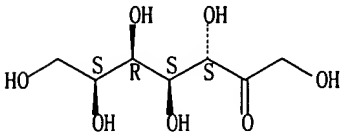
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

9 REFERENCES IN FILE CA (1907 TO DATE)
9 REFERENCES IN FILE CAPLUS (1907 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 27 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 22224-53-9 REGISTRY
ED Entered STN: 16 Nov 1984
CN L-gulo-2-Heptulose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:

CN L-gulo-Heptulose (8CI)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.

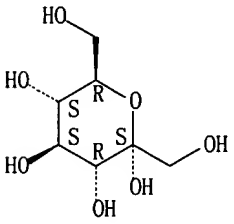


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

5 REFERENCES IN FILE CA (1907 TO DATE)
5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 28 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 20197-43-7 REGISTRY
ED Entered STN: 16 Nov 1984
CN .alpha.-D-gluco-2-Heptulopyranose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN D-gluco-Heptulopyranose, .alpha.- (8CI)
FS STEREOSEARCH
DR 26082-92-8
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX, GMELIN*
(*File contains numerically searchable property data)

Absolute stereochemistry.

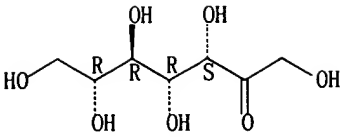


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

10 REFERENCES IN FILE CA (1907 TO DATE)
10 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 29 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 15820-03-8 REGISTRY
ED Entered STN: 16 Nov 1984
CN altro-Heptulose (8CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CHEMINFORMRX
(*File contains numerically searchable property data)

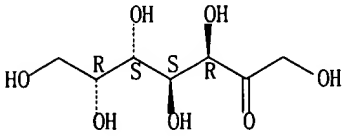
Relative stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L15 ANSWER 30 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 13403-16-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-galacto-2-Heptulose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN D-galacto-Heptulose (7CI, 8CI)
OTHER NAMES:
CN D-Galactoheptulose
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.

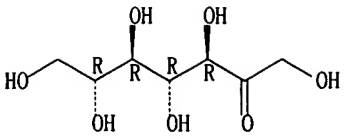


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3 REFERENCES IN FILE CA (1907 TO DATE)
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 31 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 7101-28-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-allo-2-Heptulose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN D-allo-Heptulose (7CI, 8CI)
OTHER NAMES:
CN allo-Heptulose
CN D-Alloheptulose
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CHEMINFORMRX, USPATFULL
(*File contains numerically searchable property data)

Absolute stereochemistry.

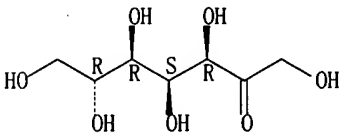


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

11 REFERENCES IN FILE CA (1907 TO DATE)
11 REFERENCES IN FILE CAPLUS (1907 TO DATE)
4 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 32 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 5349-37-1 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-gluco-2-Heptulose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN D-gluco-Heptulose (7CI, 8CI)
OTHER NAMES:
CN D-Glucoheptulose
FS STEREOSEARCH
MF C7 H14 O7
CI COM
LC STN Files: BEILSTEIN*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.

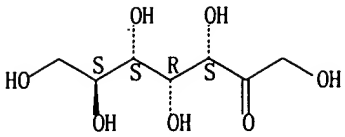


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

54 REFERENCES IN FILE CA (1907 TO DATE)
4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
54 REFERENCES IN FILE CAPLUS (1907 TO DATE)
7 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 33 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 4297-17-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN L-gluco-2-Heptulose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN L-gluco-Heptulose (7CI, 8CI)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CHEMINFORMRX
(*File contains numerically searchable property data)

Absolute stereochemistry.

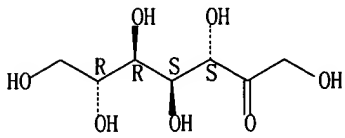


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

11 REFERENCES IN FILE CA (1907 TO DATE)
11 REFERENCES IN FILE CAPLUS (1907 TO DATE)
8 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 34 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 3615-44-9 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-manno-2-Heptulose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN D-manno-Heptulose (7CI, 8CI)
OTHER NAMES:
CN (+)-Mannoheptulose
CN D-Mannoheptulose
CN NSC 226836
FS STEREOSEARCH
MF C7 H14 O7
CI COM
LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, CSCHEM, MRCK*, NAPRALERT, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**, NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.

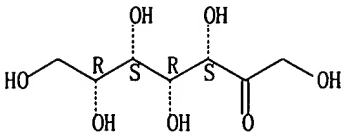


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

190 REFERENCES IN FILE CA (1907 TO DATE)
5 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
190 REFERENCES IN FILE CAPLUS (1907 TO DATE)
19 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 35 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 3343-94-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN ido-2-Heptulose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX, USPATFULL
(*File contains numerically searchable property data)

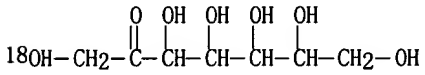
Relative stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

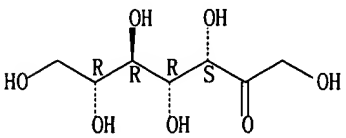
1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 36 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 3276-18-4 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-altro-2-Heptulose-1,3-13O2 (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN D-altro-Heptulose-1,3-13O2 (8CI)
MF C7 H14 O7



L15 ANSWER 37 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 3019-74-7 REGISTRY
ED Entered STN: 16 Nov 1984
CN D-altro-2-Heptulose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Sedoheptulose (8CI)
OTHER NAMES:
CN D-altro-Heptulose
CN D-Altroheptulose
CN D-Sedoheptulose
FS STEREOSEARCH
DR 7558-95-4
MF C7 H14 O7
CI COM
LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CHEMINFORMRX, CHEMLIST, CSCHEM, DDFU, DRUGU, EMBASE, MEDLINE, NAPRALERT, NIOSHTIC, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.

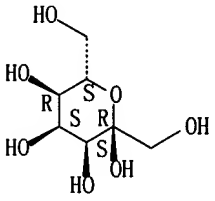


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

237 REFERENCES IN FILE CA (1907 TO DATE)
7 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
237 REFERENCES IN FILE CAPLUS (1907 TO DATE)
4 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 38 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 665-25-8 REGISTRY
ED Entered STN: 16 Nov 1984
CN .alpha.-L-allo-2-Heptulopyranose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAPLUS, CHEMINFORMRX, GMELIN*
(*File contains numerically searchable property data)

Absolute stereochemistry.

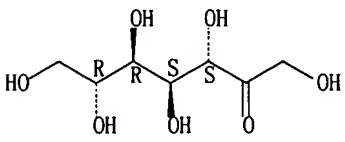


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L15 ANSWER 39 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 654-29-5 REGISTRY
ED Entered STN: 16 Nov 1984
CN manno-2-Heptulose (8CI, 9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN manno-Heptulose (6CI, 7CI)
OTHER NAMES:
CN Mannoheptulose
CN Mannoketoheptose
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CHEMINFORMRX, DDFU, DRUGU, EMBASE, MEDLINE, NAPRALERT, TOXCENTER, USPATFULL
(*File contains numerically searchable property data)

Relative stereochemistry.

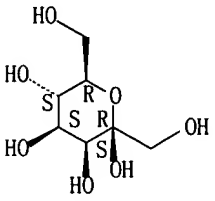


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

184 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
184 REFERENCES IN FILE CAPLUS (1907 TO DATE)
26 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 40 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 562-62-9 REGISTRY
ED Entered STN: 16 Nov 1984
CN .beta.-D-manno-2-Heptulo-2,6-pyranose (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN D-manno-Heptulopyranose, .beta.- (8CI)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CAOLD, CHEMINFORMRX, GMELIN*
(*File contains numerically searchable property data)

Absolute stereochemistry.

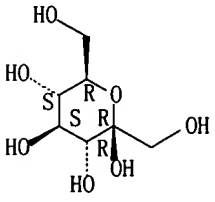


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 41 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 562-61-8 REGISTRY
ED Entered STN: 16 Nov 1984
CN .beta.-D-gluco-2-Heptulopyranose (8CI, 9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CA, CAOLD, CAPLUS, CHEMINFORMRX, GMELIN*
(*File contains numerically searchable property data)

Absolute stereochemistry.



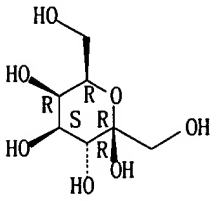
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 42 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 470-47-3 REGISTRY

ED Entered STN: 16 Nov 1984
CN .beta.-D-galacto-2-Heptulopyranose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CHEMINFORMRX, GMELIN*
(*File contains numerically searchable property data)

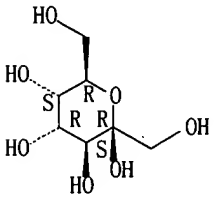
Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L15 ANSWER 43 OF 43 REGISTRY COPYRIGHT 2005 ACS on STN
RN 470-46-2 REGISTRY
ED Entered STN: 16 Nov 1984
CN .beta.-D-altro-2-Heptulopyranose (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H14 O7
LC STN Files: BEILSTEIN*, CAOLD, CHEMINFORMRX, GMELIN*
(*File contains numerically searchable property data)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

8 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> => d his

(FILE 'HOME' ENTERED AT 13:45:24 ON 22 MAR 2005)

FILE 'HCAPLUS' ENTERED AT 13:45:37 ON 22 MAR 2005

FILE 'STNGUIDE' ENTERED AT 13:45:42 ON 22 MAR 2005

FILE 'HCAPLUS' ENTERED AT 13:47:35 ON 22 MAR 2005
L1 1 US20020035071/PN

FILE 'REGISTRY' ENTERED AT 13:48:08 ON 22 MAR 2005

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     FILE 'HCAPLUS' ENTERED AT 13:48:11 ON 22 MAR 2005
L2             TRA L1 1- RN :        5 TERMS

     FILE 'REGISTRY' ENTERED AT 13:48:11 ON 22 MAR 2005
L3           5 SEA L2

     FILE 'WPIX' ENTERED AT 13:48:14 ON 22 MAR 2005

     FILE 'STNGUIDE' ENTERED AT 13:48:19 ON 22 MAR 2005

     FILE 'WPIX' ENTERED AT 13:48:25 ON 22 MAR 2005
L4           1 US20020035071/PN

     FILE 'REGISTRY' ENTERED AT 13:59:53 ON 22 MAR 2005
L5             QUE (PMS OR MAN OR IDS)/CI OR UNSPECIFIED OR COMPOUND OR COMPD
L6           213 C7H14O7
L7            61 L6 AND OC5/ES
L8            61 L7 NOT L5
L9            13 L8 AND HEPTULOPYRANOSE
                 SEL RN 2-13 L9
L10           12 E1-12 AND L9
L11          152 L6 NOT L7
L12          146 L11 NOT L5
L13           37 L12 AND HEPTULOSE
                 SEL RN 1-11 13 16-22 25-28 30-37 L11
                 DEL SEL Y
                 SEL RN 1-11 13 16-22 25-28 30-37 L13
L14           31 E1-31 AND L13
L15           43 L10 OR L14

     FILE 'HCAPLUS' ENTERED AT 14:10:22 ON 22 MAR 2005
                 E PITHA J/AU
L16          239 E3,E8-10
                 E ROTH G/AU
L17          274 E3-14
                 E ROTH GEORGE/AU
L18          238 E3-8
                 E HAYEK M/AU
L19           92 E3-4,E7-11
                 E CEDDIA M/AU
L20           12 E4-8
L21        12105 (PROCTER AND GAMBLE)/CS,PA
L22          639 L15
L23         1762 ?HEPTULOSE/BI OR HEPTULOPYRANOSE OR PERSEULOSE
                 E NUTRITION/CT
                 E E10+ALL
L24       110288 "NUTRITION, ANIMAL"+OLD,NT/CT
                 E E25+ALL
L25        15863 APPETITE+NT/CT
                 E FOOD/CT
L26        96745 FOOD+OLD,NT1/CT
L27       158116 FOOD?/CW
L28            1 L22-23 AND L16-21
L29         1824 L22-23 NOT L28
L30           13 L29 AND L24-27
                 E WEIGHT LOSS/CT
                 E E3+ALL
                 E BODY WEIGHT/CT
                 E E3+ALL
L31         1902 BODY WEIGHT/CT (L) LOSS
                 E CACHEXIA/CT
```

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                E E3+ALL
L32         2097 CACHEXIA/CT
                E OBESITY/CT
                E E3+ALL
L33        22078 OBESITY+NT/CT
                E E7+ALL
L34         5698 ANTIOBESITY AGENTS+OLD/CT
L35           15 L29 AND L31-34
L36           27 L30 OR L35
                E CALOR/CT
                E E22+ALL
L37         1735 CALORIFIC VALUE/CT
                E E9+ALL
L38         8105 DIETARY ENERGY+NT/CT
                E E8+ALL
L39         8167 "ENERGY METABOLISM, ANIMAL"+OLD/CT
                E ANIMAL METABOLISM/CT
                E E3+ALL
                E E2
                E E3+ALL
L40         9053 "METABOLISM, ANIMAL"+OLD,NT/CT (L) ENERGY
L41            2 L29 AND L37-40
                SEL AN 1-2 4 14 17 20 22 24 25 27 L36
L42           10 E1-20 AND L36
                SEL AN 1-2 4-8 10 L42
L43            8 E21-36 AND L42

     FILE 'BIOSIS' ENTERED AT 14:40:44 ON 22 MAR 2005
                E PITHA J/AU
L44          198 E3,E9-10
                E ROTH G/AU
L45          685 E3-16,E22-27
                E HAYEK M/AU
L46          100 E3,E6,E12-14
                E CEDDIA M/AU
L47           27 E4-6
L48         3699 (PROCTER AND GAMBLE)/CS
L49            0 L44-48 AND (L15 OR ?HEPTULOSE OR HEPTULOPYRANOSE OR PERSEULOSE)
L50           88 L44-48 AND CALOR?
L51           12 L50 AND GLUCOSE
L52           11 L51 AND RESTRICT?

     FILE 'WPIX' ENTERED AT 14:45:14 ON 22 MAR 2005
L53           56 (?HEPTULOSE OR HEPTULOPYRANOSE OR PERSEULOSE)/BIX

     FILE 'REGISTRY' ENTERED AT 14:50:01 ON 22 MAR 2005
                SAV TEM L15 GIT052F0/A

=> b hcap
FILE 'HCAPLUS' ENTERED AT 14:50:37 ON 22 MAR 2005
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)
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FILE COVERS 1907 - 22 Mar 2005 VOL 142 ISS 13
FILE LAST UPDATED: 21 Mar 2005 (20050321/ED)

This file contains CAS Registry Numbers for easy and accurate
substance identification.

=> d all 128 tot

L28 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:221205 HCAPLUS
DN 136:226811
ED Entered STN: 22 Mar 2002
TI Mimicking the metabolic effects of caloric restriction by administration
of glucose antimetabolites
IN Pitha, Josef; Roth, George
PA USA
SO U.S. Pat. Appl. Publ., 4 pp., Cont.-in-part of U. S. Ser. No. 889,877,
abandoned.
CODEN: USXXCO
DT Patent
LA English
IC ICM A61K031-70
NCL 514023000
CC 1-11 (Pharmacology)
Section cross-reference(s): 17
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002035071	A1	20020321	US 2001-950052	20010912
PRAI	US 1997-889877	B2	19970708		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2002035071	ICM	A61K031-70
	NCL	514023000
US 2002035071	ECLA	A61K031/70B

AB A method of obtaining beneficial biol. results associated with caloric
restriction may be gained by administration of a composition containing at least
one active agent which blocks metabolism of glucose as a source of energy in
cells in glucose metabolism blocking effective amts. to an animal in need
thereof.
ST caloric restriction glucose antimetabolite anhydrosugar
IT Canis familiaris
Hypothermia
(mimicking metabolic effects of caloric restriction by administration
of glucose antimetabolites)
IT 50-99-7, D-Glucose, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(antimetabolites; mimicking metabolic effects of caloric restriction by
administration of glucose antimetabolites)
IT 146-72-5, 3-O-Methylglucose 654-29-5, Mannoheptulose
20408-97-3, 5-Thio-D-glucose 41107-82-8, 2,5-Anhydro-D-mannitol
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)
(mimicking metabolic effects of caloric restriction by administration
of glucose antimetabolites)

=> d all 143 tot

L43 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:368857 HCAPLUS
DN 140:386000
ED Entered STN: 06 May 2004
TI Compounds, compositions and methods for modulating fat metabolism for treatment of metabolic disorders
IN Gaudriault, Georges; Kilinc, Ahmet; Bousquet, Olivier; Goupil-Lamy, Anne; Harosh, Itzik
PA Obetherapy Biotechnology, Fr.
SO PCT Int. Appl., 461 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A61K
CC 1-3 (Pharmacology)
FAN. CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004037159	A2	20040506	WO 2003-IL860	20031023
	WO 2004037159	A3	20040715		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-420316P P 20021023
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004037159	ICM	A61K

OS MARPAT 140:386000
AB Methods and compns. of identifying candidate compds., for modulating fat metabolism and/or inhibiting Apobec-1 activity are provided. The invention relates to compds. and pharmaceutical compns. which are useful for regulating fat metabolism and can be used for treatment of diseases and disorders selected from the group consisting of overweight, obesity, atherosclerosis, hypertension, non-insulin dependent diabetes mellitus, pancreatitis, hypercholesteremia, hypertriglyceridemia, hyperlipidemia.
ST fat metab apolipoprotein Apobec1 inhibitor antiobestiy hypolipemic obesity
IT Apolipoproteins
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(1 (Apobec-1), B mRNA editing enzyme isoform; compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)
IT Apolipoproteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(B-48; compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)
IT Protein sequences
(alignment; compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)
IT Antiarteriosclerotics

(antiatherosclerotics; compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)

IT Anti-inflammatory agents
Anticholesteremic agents
Antidiabetic agents
Antihypertensives
Antiobesity agents
Atherosclerosis
Drug screening
Human
Hypercholesterolemia
Hypertension
Hypertriglyceridemia
Hypolipemic agents
Obesity
Pharmacophores
Protein sequences
Structure-activity relationship
(compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)

IT Lipids, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)

IT Chemistry
(computational; compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)

IT Information systems
(data; compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)

IT Lipids, biological studies
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hyperlipidemia; compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)

IT Adipose tissue
(metabolism; compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)

IT Diabetes mellitus
(non-insulin-dependent; compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)

IT Inflammation
Pancreas, disease
(pancreatitis; compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)

IT Information systems
(storage; compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)

IT 51-59-2 52-66-4 54-42-2 59-14-3 65-46-3, Cytidine 84-52-6, 3'-Cytidylic acid 131-55-5 147-94-4, Arabinocytosine 149-87-1 149-95-1 320-67-2 342-69-8 362-75-4 462-88-4 466-18-2 488-31-3D, Pentaric acid, stereoisomers 562-73-2D, stereoisomers 686-43-1 686-50-0 692-04-6 769-03-9 770-74-1 869-19-2 1024-99-3 1068-90-2 1078-64-4 1188-37-0 1191-22-6D, stereoisomers 1504-41-2 1658-27-1, 1,5-Dioxaspiro[5.5]undecane-2,4-dione 1707-77-3 1818-71-9 1956-30-5 1999-33-3 1999-42-4 2139-60-8 2188-09-2 2189-27-7 2312-73-4 2510-38-5 2782-86-7D, Heptonic acid, stereoisomers 2819-56-9 2875-26-5D, stereoisomers 3001-46-5 3054-58-8 3081-61-6 3131-60-0 3232-65-3 3250-02-0 3258-11-5 3303-41-1 3322-70-1 3346-70-1 3624-34-8 3624-37-1 3721-90-2 3736-77-4 3750-26-3D, stereoisomers 3768-18-1 3770-74-9 3786-46-7

3814-79-7 3918-94-3 4365-31-5 4417-88-3 4430-28-8D, stereoisomers
4744-47-2 4767-03-7 4836-13-9 4887-54-1 4902-38-9 4961-03-9
5183-02-8 5313-55-3 5382-77-4 5395-36-8 5416-55-7 5428-96-6
5440-35-7 5447-62-1 5460-66-2 5578-82-5, 1,4-Dioxacyclotetradecane-
5,14-dione 5746-27-0 5948-68-5 6161-23-5 6253-54-9D, stereoisomers
6269-96-1 6275-97-4 6285-22-9 6318-57-6 6374-97-6 6419-70-1
6422-36-2 6628-11-1 6641-30-1 6641-35-6 6741-90-8 6917-36-8D,
Pentitol, stereoisomers 6940-61-0D, stereoisomers 6958-35-6D,
stereoisomers 6965-31-7D, stereoisomers 6973-89-3 6976-37-0
7146-67-0 7474-43-3 7481-89-2 7491-74-9 7504-90-7 7558-29-4D,
stereoisomers 7586-36-9D, stereoisomers 7728-81-6 10082-57-2
10212-20-1 10238-03-6D, stereoisomers 10486-63-2 13030-62-1
13253-09-3 13389-15-6 13433-02-8 13588-94-8 14001-10-6
14009-07-5D, stereoisomers 14276-10-9, 1,1,2,2-Cyclobutanetetramethanol
14505-44-3D, stereoisomers 15537-71-0 15763-12-9 15888-38-7
15891-49-3 15981-92-7 16424-76-3 16424-88-7 16424-88-7D,
stereoisomers 16485-10-2D, stereoisomers 16710-12-6, 6-Methylcytidine
16804-55-0 17050-70-3D, stereoisomers 17242-87-4 17902-23-7
19234-66-3 19706-80-0 20187-46-6 20402-36-2 21017-04-9
21438-60-8 21451-32-1 21559-72-8 21612-23-7 21798-35-6
21832-28-0 22413-28-1 22522-21-0 23141-03-9 23147-59-3D,
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26001-38-7 26596-15-6D, stereoisomers 28733-39-3 28817-54-1
28817-55-2 28822-73-3 29171-87-7 29768-80-7D, stereoisomers
29880-25-9 30635-52-0D, Heptitol, stereoisomers 30902-36-4
31234-47-6 31281-86-4 31796-57-3 32595-59-8 32976-04-8
33054-80-7 34340-37-9 35674-84-1D, Heptonamide, stereoisomers
35824-20-5 36396-99-3 37487-95-9 38048-32-7 38062-70-3
38313-48-3 40582-67-0 40615-39-2 40825-95-4D, Heptopyranose,
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stereoisomers 43025-54-3 43179-48-2 45007-61-2D, Hexitol,
stereoisomers 46795-89-5D, stereoisomers 50408-20-3 51424-07-8D,
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52338-88-2 52393-78-9D, stereoisomers 52899-07-7 52899-09-9
53106-52-8D, Pentose, stereoisomers 54982-83-1, 1,4-Dioxacyclohexadecane-
5,16-dione 55478-49-4 57100-18-2, Pseudoisocytidine 57204-06-5
57713-49-2 57840-71-8 58093-05-3, 6,10-Dioxaspiro[4.5]decane-7,9-dione
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64624-52-8 64949-81-1 65456-86-2 66857-14-5 67219-55-0
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69407-80-3 69779-92-6 69791-26-0 69984-73-2 70354-63-1
71540-13-1 71698-68-5 71927-65-6D, Heptose, stereoisomers 73502-37-1
73716-22-0 75145-86-7
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)
(compds., compns. and methods for modulating fat metabolism for treatment
of metabolic disorders)

IT 76054-81-4 76512-82-8 77517-00-1 77642-81-0 79465-26-2D,
2-Heptulose, stereoisomers 84211-42-7 84472-90-2
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stereoisomers 91086-48-5 91346-99-5 91400-85-0 91646-60-5D,
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134440-58-7 134515-27-8 135701-66-5 135701-70-1 135701-73-4
138284-91-0 139686-85-4D, 2-Hexulose, stereoisomers 142183-69-5
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307520-05-4 308832-81-7 308832-84-0 308837-67-4 309755-94-0
309755-99-5 309923-62-4 312609-13-5 312699-16-4 312699-17-5
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383403-98-3 385378-98-3 393784-53-7 393784-54-8 393820-13-8
393822-08-7 393822-71-4 393822-74-7 393823-03-5 400879-41-6
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RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL
(Biological study); USES (Uses)
(compds., compns. and methods for modulating fat metabolism for treatment
of metabolic disorders)

IT 500191-32-2 500278-24-0 501370-44-1 510761-16-7 510761-18-9
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Octopyranose 686299-14-9D, stereoisomers 686299-15-0D, stereoisomers

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686301-02-0 686301-03-1 686301-04-2 686301-05-3 686301-07-5
686301-11-1 686301-13-3
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)

IT 686301-14-4 686301-15-5 686301-16-6 686301-17-7 686301-18-8
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686301-70-2 686301-71-3 686301-72-4 686301-73-5 686301-74-6
686301-75-7 686301-76-8 688007-14-9D, stereoisomers 688007-15-0D, stereoisomers 688007-16-1D, stereoisomers 688007-17-2D, stereoisomers 688007-20-7D, stereoisomers 688007-21-8 688007-21-8D, stereoisomers 688007-23-0D, stereoisomers 688007-24-1D, stereoisomers 688007-25-2D, stereoisomers 688007-26-3D, stereoisomers 688007-27-4D, stereoisomers 688007-28-5
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(compds., compns. and methods for modulating fat metabolism for treatment of metabolic disorders)

L43 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:376385 HCAPLUS
DN 138:362696
ED Entered STN: 16 May 2003
TI Method for normalizing insulin levels
IN Chapnick, David I.; Chapnick, Linda G.
PA Quality Vitamins, Inc., USA
SO U.S. Pat. Appl. Publ., 6 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM A61K031-7012
ICS A61K031-198
NCL 514053000; 536123130; 514566000
CC 1-10 (Pharmacology)
Section cross-reference(s): 11, 17, 63
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2003092669	A1	20030515	US 2002-280332	20021025
WO 2004039356	A1	20040513	WO 2002-US35636	20021107
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2004228933	A1	20041118	US 2004-868232	20040615

PRAI US 2001-343576P P 20011026
US 2002-280332 A 20021025

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2003092669	ICM	A61K031-7012
	ICS	A61K031-198
	NCL	514053000; 536123130; 514566000
US 2003092669	ECLA	A61K031/198; A61K031/7012; A61K031/7012+M
US 2004228933	ECLA	A61K031/198; A61K031/7012; A61K031/7012+M

AB The invention is directed to a dietary supplement which contains mannoheptulose. Mannoheptulose occurs naturally in avocado fruit and is prepared by ethanolic extraction The dietary supplement and its method of use can lower serum insulin levels and lower a subject's weight The dietary supplement in its disclosed form includes a controlled release system for mannoheptulose. The dietary supplement may also include one or more amino acids. A group of overweight male human subjects was administered enteric-coated D-mannoheptulose and L-glutamic acid. Enterically-coated mannoheptulose proved to be effective short-term and longterm, in lowering elevated serum insulin without inducing hyperglycemia.

ST normalizing insulin blood mannoheptulose controlled release; avocado mannoheptulose dietary supplement wt control

IT Fruit
(avocado; mannoheptulose from avocado for normalizing serum insulin levels)

IT Body weight
(control of; mannoheptulose from avocado for normalizing serum insulin levels)

IT Drug delivery systems
(delayed release, oral; mannoheptulose from avocado for normalizing serum insulin levels)

IT Amino acids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(dietary supplements containing mannoheptulose and; mannoheptulose from avocado for normalizing serum insulin levels)

IT Drug delivery systems
(enteric-coated; mannoheptulose from avocado for normalizing serum insulin levels)

IT Persea
(fruit; mannoheptulose from avocado for normalizing serum insulin levels)

IT Hyperglycemia
(insulin lowering without induction of; mannoheptulose from avocado for normalizing serum insulin levels)

IT Body weight
(loss; mannoheptulose from avocado for normalizing serum insulin levels)

IT Blood serum
Human
(mannoheptulose from avocado for normalizing serum insulin levels)

IT Drug delivery systems
(oral, controlled-release; mannoheptulose from avocado for normalizing serum insulin levels)

IT Drug delivery systems
(oral, sustained release; mannoheptulose from avocado for normalizing serum insulin levels)

IT Carbohydrates, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)

(reduction in craving for; mannoheptulose from avocado for normalizing serum insulin levels)
IT Diet
(supplements; mannoheptulose from avocado for normalizing serum insulin levels)
IT 9004-32-4, Carboxymethylcellulose
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(for controlled-release system; mannoheptulose from avocado for normalizing serum insulin levels)
IT 64-17-5, Ethanol, uses
RL: NUU (Other use, unclassified); USES (Uses)
(mannoheptulose extraction with; mannoheptulose from avocado for normalizing serum insulin levels)
IT 50-99-7, D-Glucose, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(mannoheptulose from avocado for normalizing serum insulin levels)
IT 654-29-5P, Mannoheptulose
RL: BSU (Biological study, unclassified); FFD (Food or feed use); NPO (Natural product occurrence); PAC (Pharmacological activity); PUR (Purification or recovery); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); USES (Uses)
(mannoheptulose from avocado for normalizing serum insulin levels)
IT 3615-44-9, D-Mannoheptulose
RL: BSU (Biological study, unclassified); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(method for normalizing insulin levels)
IT 56-84-8, L-Aspartic acid, biological studies 56-86-0, L-Glutamic acid, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(oral dosage form containing mannoheptulose and; mannoheptulose from avocado for normalizing serum insulin levels)
IT 9004-10-8, Insulin, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(serum levels; mannoheptulose from avocado for normalizing serum insulin levels)

L43 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1992:568886 HCAPLUS
DN 117:168886
ED Entered STN: 01 Nov 1992
TI Genetically obese rats with (SHR/N-cp) and without diabetes (LA/N-cp) share abnormal islet responses to glucose
AU Timmers, Kim I.; Voyles, Nancy R.; Recant, Lillian
CS Diabetes Res. Lab., Veterans Adm. Med. Cent., Washington, DC, USA
SO Metabolism, Clinical and Experimental (1992), 41(10), 1125-33
CODEN: METAAJ; ISSN: 0026-0495
DT Journal
LA English
CC 14-14 (Mammalian Pathological Biochemistry)
Section cross-reference(s): 2
AB To assess the effect of hyperglycemia on the function of islets obtained from obese rats, the behavior of isolated islets from LA/N-corpulent (non-diabetic obese) and SHR/N-corpulent (diabetic obese) male rats was examined and compared. Islets from both genetic models showed a left-shifted glucose dose-response curve for insulin release (concns. for half-maximal release, 5 to 6 mmol/L v 12 to 13 mmol/L in LA/N lean littermates and 3 mmol/L v 10 mmol/L in lean SHR/N). When insulin release was expressed per unit islet volume, the 4-fold to 5-fold enlarged islets

from both obese diabetic and obese nondiabetic rats showed decreased insulin secretory response in high glucose concns., although the decrease was more severe in the diabetic rats. Glucose-stimulated insulin release by islets from both models was relatively resistant to inhibition by 1.2 mmol/L mannoheptulose, although nearly complete inhibition was observed with 16 mmol/L mannoheptulose. Islets of obese diabetic rats were also resistant to the calcium-channel blocker, verapamil, suggesting an abnormal pathway of stimulus-secretion coupling for glucose. Glucose oxidation to carbon dioxide was increased in both obese models at all glucose concns. when expressed per islet. In data expressed per unit volume, the larger islets from the obese, non-diabetic rats showed a left-shifted dose-response curve with an unchanged maximum rate of glucose oxidation at high (16.5 mmol/L) glucose concns. In contrast, islets from obese-diabetic rats showed severely decreased rates of oxidation at all glucose concns. Reduced immunoreactive glucose transporter protein (Glut-2) was found in both non-diabetic and diabetic obese islets. The data demonstrate that many of the islet lesions associated with high plasma glucose concns. also can arise in genetic obesity in the absence of sustained hyperglycemia.

ST hyperglycemia diabetes insulin pancreas islet obesity

IT Hyperglycemia
(in genetic obesity, insulin release by pancreatic islet .beta.-cells response to)

IT Diabetes mellitus
(in genetic obesity, insulin release by pancreatic islet .beta.-cells response to glucose in)

IT Glycoproteins, specific or class
RL: BIOL (Biological study)
(GLUT-2 (glucose-transporting, 2), of pancreatic islet, in genetic obesity, glucose effect on insulin release in relation to)

IT Obesity
(genetic, insulin release by pancreatic islet .beta.-cells in, hyperglycemia in diabetes mellitus in relation to)

IT Pancreatic islet of Langerhans
(.beta.-cell, insulin release by, in genetic obesity, hyperglycemia in diabetes mellitus in relation to)

IT 50-99-7, Glucose, biological studies
RL: BIOL (Biological study)
(insulin release by pancreatic islet .beta.-cells response to, in genetic obesity, hyperglycemia and diabetes mellitus in relation to)

IT 9004-10-8, Insulin, biological studies
RL: BIOL (Biological study)
(release of, by pancreatic islet .beta.-cells, in genetic obesity, glucose effect on, hyperglycemia and diabetes mellitus in relation to)

L43 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1983:610530 HCAPLUS
DN 99:210530
ED Entered STN: 12 May 1984
TI Changes in food intake and meal patterns following injection of D-mannoheptulose in rats
AU Langhans, Wolfgang; Scharrer, Erwin
CS Tieraerzt. Fak., Univ. Muenchen, Munich, Fed. Rep. Ger.
SO Behavioral and Neural Biology (1983), 38(2), 269-86
CODEN: BNBIDY; ISSN: 0163-1047
DT Journal
LA English
CC 13-6 (Mammalian Biochemistry)
Section cross-reference(s): 2, 18
AB Behavioral and metabolite effects of i.p. D-mannoheptulose (MH) injections were investigated in rats fed a high-carbohydrate (HC) or a

high-fat (HF) diet. Injection of 125 or 250 mg/kg MH did not affect food intake in HC rats. Injection of 400 mg/kg MH inhibited feeding in HC rats by primarily reducing meal size. In contrast, none of the MH doses tested (125, 250, 400, 800 mg/kg) affected food intake or meal patterns in HF rats. The hyperglycemia following MH injection (400 mg/kg) was more pronounced in HC compared to HF rats. MH injection (400 mg/kg) induced a strong taste aversion in HC rats, but had only weak aversive consequences in HF rats. The data throw some doubt on the hypothetical role of insulin in the production of satiety. In addition, the results suggest that a hedonic shift takes place following MH injection in HC rats. The strong dislike for the HC diet after MH injection might be triggered by the severe disturbance of glucose homeostasis and might contribute to the transient hypophagia in HC rats by primarily reducing meal size.

ST satiety mannoheptulose diet insulin behavior

IT Animal nutrition
(carbohydrates and fats in, mannoheptulose effect on food intake and meal patterns in relation to)

IT Hyperglycemia
(from mannoheptulose, diet in relation to)

IT Diabetes mellitus
(from mannoheptulose, satiety in relation to)

IT Liver, composition
(glycogen of, mannoheptulose effect on)

IT Carbohydrates and Sugars, biological studies
Fats, biological studies
RL: BIOL (Biological study)
(in animal nutrition, mannoheptulose effect on food intake and meal patterns in relation to)

IT Fatty acids, biological studies
RL: BIOL (Biological study)
(of blood plasma, mannoheptulose effect on)

IT Behavior
(feeding, mannoheptulose effect on, satiety in relation to)

IT Appetite
(satiety, mannoheptulose effect on, diet and behavior in relation to)

IT Behavior
(taste aversion, mannoheptulose effect on, satiety in relation to)

IT 9004-10-8, biological studies
RL: BIOL (Biological study)
(in satiety, mannoheptulose effect on food intake in relation to)

IT 9005-79-2, biological studies
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
(of liver, mannoheptulose effect on)

IT 3615-44-9
RL: BIOL (Biological study)
(satiety response to, diet effect on, insulin in relation to)

L43 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1979:165731 HCAPLUS

DN 90:165731

ED Entered STN: 12 May 1984

TI Insulin dependence of paradoxical overeating: effect of mannoheptulose, somatostatin, and cycloheximide

AU Rezek, Milan; Havlicek, Viktor; Friesen, Henry

CS Fac. Med., Univ. Manitoba, Winnipeg, MB, Can.

SO American Journal of Physiology (1979), 236(3), E205-E211
CODEN: AJPHAP; ISSN: 0002-9513

DT Journal
LA English
CC 13-13 (Mammalian Biochemistry)
AB To assess the role of insulin in the mediation of paradoxical stimulation of food intake by larger duodenal loads of isotonic glucose, rabbits were pretreated sep. with mannoheptulose, somatostatin, and cycloheximide in an attempt to affect different stages of insulin release. Pretreatment with mannoheptulose seemingly did not prevent glucose-induced overeating that was previously shown to correlate closely with the exaggerated and prolonged increase of insulin levels. However, mannoheptulose itself stimulated food intake in the absence of insulin increase, thus suggesting that 2 different mechanisms are involved. The mechanisms stimulating food intake in response to glucose infusions were apparently blocked and replaced by the action of mannoheptulose, which coincidentally also stimulated food intake. Somatostatin, which initially reduced the level of insulin, caused mild hypoglycemia, and later prevented the increase of insulin level to subsequent glucose infusions, completely abolished the paradoxical feeding response. In other expts., this response was initially reduced and later eliminated by pretreatment with cycloheximide, which caused a prolonged reduction of plasma insulin combined with hyperglycemia. Evidently, the expression of paradoxical stimulation of food intake by larger alimentary loads of glucose is specifically dependent on the apparently exaggerated and prolonged release of insulin.
ST appetite stimulation glucose insulin
IT Appetite
(glucose duodenal infusion stimulation of, insulin in)
IT Intestine
(duodenum, appetite stimulation by glucose infusion in, insulin in)
IT 51110-01-1
RL: BIOL (Biological study)
(appetite response to, insulin in relation to)
IT 654-29-5
RL: BIOL (Biological study)
(appetite stimulation by)
IT 50-99-7, biological studies
RL: BIOL (Biological study)
(appetite stimulation by duodenal infusion of, insulin in)
IT 9004-10-8, biological studies
RL: BIOL (Biological study)
(in appetite stimulation by duodenal infusion of glucose)

L43 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1976:431898 HCAPLUS
DN 85:31898
ED Entered STN: 12 May 1984
TI The response of chickens to D-mannoheptulose: feeding behavior and blood glucose
AU Smith, C. J. V.; Baranowski-Kish, L. L.
CS Dep. Biol., Univ. Toledo, Toledo, OH, USA
SO Poultry Science (1976), 55(1), 444-7
CODEN: POSCAL; ISSN: 0032-5791
DT Journal
LA English
CC 18-13 (Animal Nutrition)
AB Administration of mannoheptulose [654-29-5] at 200-300 mg/kg body weight, i.p. or into the heart increased plasma glucose concns. (24.3%) 4 hr after administration. Food consumption was decreased at 300 mg/kg body weight, compared to the saline controls, during the 2nd and 3rd hr of testing. The results were similar to those reported for mammals, although the increase in plasma glucose concentration was not as dramatic in

birds as it was in mammals. Food consumption studies in rats indicated a suppression; however, it was not significant.
ST mannoheptulose blood sugar chicken; appetite chicken
heptulose
IT Chicken
(blood sugar of, mannoheptulose effect on)
IT Appetite
(depressant, mannoheptulose, in chicken)
IT Blood sugar
(mannoheptulose effect on, in chicken)
IT 654-29-5
RL: BIOL (Biological study)
(blood sugar of chickens in response to)

L43 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1973:52565 HCAPLUS
DN 78:52565
ED Entered STN: 12 May 1984
TI Pancreatic .beta.-cell recognition of insulin secretagogues. V. Binding and stimulatory action of phlorizin
AU Hellman, Bo; Lernmark, Ake; Sehlin, Janove; Taljedal, Inge Bert
CS Dep. Histol., Univ. Umea, Umea, Swed.
SO Molecular Pharmacology (1972), 8(6), 759-69
CODEN: MOPMA3; ISSN: 0026-895X
DT Journal
LA English
CC 1-4 (Pharmacodynamics)
AB Phlorizin (I) [60-81-1] (5-15mM) and phloretin [60-82-2] (10mM) stimulated insulin [9004-10-8] release from isolated pancreatic islets of obese-hyperglycemic mice, but only I inhibited glucose [50-99-7]-stimulated insulin release. The stimulatory effects of I and phloretin were inhibited by mannoheptulose [654-29-5], suggesting that these 2 compds. were sensed by a system which recognizes glucose as an insulin secretagog. However, the mechanism sensitive to I did not possess the full competence of the glucose-recognizing system, since I did not potentiate the insulin-releasing actions of arginine [74-79-3] or theophylline [58-55-9]. Leucine [61-90-5], but not pyruvate [127-17-3] or succinate [110-15-6], enhanced the stimulatory effect of I. Radioactive I rapidly accumulated in amts. far exceeding the urea space of the islets. This uptake was concentration-dependent up to the millimolar concentration range and was not significantly influenced by glucose. Antimycin A [1397-94-0], p-chloromercuriphenylsulfonic acid [554-77-8], and chlorpromazine [50-53-3], which increase the uptake of extracellular space markers, stimulated the uptake of I in whole islets, but not in islet homogenates. Apparently, I binds predominantly to plasma membranes of intact .beta.-cells. Although binding may not be specific for glucose sites, reaction with such a site could be responsible for I-induced insulin release.
ST phlorizin insulin release; pancreas membrane phlorizin binding
IT Obesity
(insulin secretion in diabetes mellitus in, phlorizin effect on)
IT Diabetes mellitus
(insulin secretion in obesity in, phlorizin effect on)
IT Biological transport
(of phlorizin, by pancreatic islets of Langerhans)
IT Pancreatic islet of Langerhans
(phlorizin absorption by)
IT 60-81-1
RL: BIOL (Biological study)
(insulin secretion response to)
IT 654-29-5

RL: BIOL (Biological study)
(insulin secretion response to phloretin and phlorizin inhibition by)
IT 61-90-5, biological studies
RL: BIOL (Biological study)
(insulin secretion response to phlorizin and)
IT 110-15-6, biological studies 127-17-3, biological studies
RL: BIOL (Biological study)
(insulin secretion response to phlorizin in relation to)
IT 50-99-7, biological studies
RL: BIOL (Biological study)
(insulin secretion response to, phloretin and phlorizin effect on)
IT 58-55-9 60-82-2 74-79-3, biological studies
RL: BIOL (Biological study)
(insulin secretion response to, phlorizin in relation to)
IT 50-53-3, biological studies 554-77-8 1397-94-0
RL: BIOL (Biological study)
(phlorizin absorption response to, in pancreatic islets of Langerhans)
IT 9004-10-8, biological studies
RL: BIOL (Biological study)
(secretion of, phloretin and phlorizin effect on)

L43 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1969:411607 HCAPLUS
DN 71:11607
ED Entered STN: 12 May 1984
TI Chronic effects of mannoheptulose in hyperglycemic-obese mice
AU Hoshi, Mitsuru; Shreeve, Walton W.
CS Med. Res. Center, Brookhaven Nat. Lab., Upton, NY, USA
SO Metabolism, Clinical and Experimental (1969), 18(5), 422-6
CODEN: METAAJ; ISSN: 0026-0495
DT Journal
LA English
CC 15 (Pharmacodynamics)
AB Obese mice receiving D-mannoheptulose (0.1% of diet) in the drinking water and by s.c. injection (20 mg./mouse/day) gained slightly more weight than identically treated lean mice during the first 2-3 weeks of treatment. After 5-8 weeks of treatment, the conversion of 14C-labeled and tritiated glucose to saponifiable fatty acids of liver and carcass, to body water, and to expired CO2 were not significantly different in D-mannoheptulose-treated mice, as compared with saline-treated controls. Fasting blood glucose levels were unaffected by D-mannoheptulose treatment, although plasma immunoreactive insulin was 100% higher in obese and 50% higher in lean mice of the D-mannoheptulose-treated groups. Incorporation of 14C- and 3H-labeled glucose into hepatic fatty acids was greater in obese than in lean mice, but no significant differences were observed in carcass fatty acids. Formation of 14CO2 was reduced in obese mice, the reduction being more significant in saline-treated than in D-mannoheptulose-treated mice. These data did not correspond to those observed in other species, which showed inhibitory effects of D-mannoheptulose on insulin release.
ST hyperglycemia mannoheptulose; mannoheptulose obesity; obesity mannoheptulose; insulin mannoheptulose; glucose mannoheptulose
IT Obesity
(mannoheptulose effect on metabolism in diabetes and)
IT Diabetes
(mannoheptulose effect on metabolism in obesity and)
IT 3615-44-9
RL: BIOL (Biological study)
(metabolism response to, in obesity and diabetes)

=> b biosis
FILE 'BIOSIS' ENTERED AT 14:50:59 ON 22 MAR 2005

FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 16 March 2005 (20050316/ED)

FILE RELOADED: 19 October 2003.

=> d all l52 tot

L52 ANSWER 1 OF 11 BIOSIS on STN
AN 2004:453397 BIOSIS
DN PREV200400452190
TI Circulating adiponectin levels increase in rats on caloric restriction: the potential for insulin sensitization.
AU Zhu, Min; Miura, Junnosuke; Lu, cy X.; Bernier, Michel; DeCabo, Rafael; Lane, Mark A.; Roth, George S.; Ingram, Donald K. [Reprint Author]
CS Lab Expt GerontolCtr Gerontol ResNIH, NIA, 5600 Nathan Shock Dr, Baltimore, MD, 21224, USA
ingramd@grc.nia.nih.gov
SO Experimental Gerontology, (July 2004) Vol. 39, No. 7, pp. 1049-1059. print.
ISSN: 0531-5565 (ISSN print).
DT Article
LA English
ED Entered STN: 24 Nov 2004
Last Updated on STN: 24 Nov 2004
AB Caloric restriction (CR) has a well-known insulin sensitizing effect in vivo. Although this effect has been confirmed in rodents and primates for many years, its precise molecular mechanisms remain unknown. Here we show a significant increase in plasma adiponectin and a decrease in blood glucose, plasma triglyceride and insulin levels in rats maintained on CR diet for 2, 10, 15, and 20 months. Long-term CR rats exhibited significantly higher insulin-stimulated insulin receptor tyrosine phosphorylation and lower PTP-1B activity both in liver and skeletal muscle than those observed in rats fed ad libitum (AL). In addition, the triglyceride levels in these tissues were significantly lower in long-term CR animals. Interestingly, concentrations of plasma adiponectin in long-term CR rats were associated with increased expression of the transcription factor mRNAs for the peroxisome proliferator-activated receptor (PPAR)alpha, gamma and delta, but decreased expression for SREBP-1c, resulting in a concerted modulation in the expression of key transcription target genes involved in fatty acid oxidation and energy combustion in liver. Taken together, our findings suggest an important role for adiponectin in the beneficial effects of long-term CR. Copyright 2004 Elsevier Inc. All rights reserved.
CC Biochemistry studies - General 10060
Biochemistry studies - Nucleic acids, purines and pyrimidines 10062
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Lipids 10066
Biochemistry studies - Carbohydrates 10068
Nutrition - General studies, nutritional status and methods 13202
Digestive system - Physiology and biochemistry 14004
Blood - Blood and lymph studies 15002

Blood - Blood cell studies 15004
Muscle - Physiology and biochemistry 17504
IT Major Concepts
Biochemistry and Molecular Biophysics; Nutrition
IT Parts, Structures, & Systems of Organisms
blood: blood and lymphatics; liver: digestive system; plasma: blood and lymphatics; skeletal muscle: muscular system
IT Chemicals & Biochemicals
PTP-1B; SREBP-1c; adiponectin; glucose; insulin; mRNA [messenger RNA]; peroxisome proliferator-activated receptors; transcription factor; triglyceride; tyrosine
IT Miscellaneous Descriptors
caloric restriction
ORGN Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
rat (common): fischer, male
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates
RN 300865-11-6 (PTP-1B)
50-99-7Q (glucose)
58367-01-4Q (glucose)
9004-10-8 (insulin)
60-18-4Q (tyrosine)
556-03-6Q (tyrosine)

L52 ANSWER 2 OF 11 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 2003:282744 BIOSIS
DN PREV200300282744
TI EFFECTS OF CALORIC RESTRICTIONS (Cr) AND A Cr MIMETIC IN PRIMATE PARKINSONISM.
AU Maswood, N. [Reprint Author]; Young, J. [Reprint Author]; Handy, A. [Reprint Author]; Tilmont, E. [Reprint Author]; Herscovitch, P.; Carson, N. R.; Eckelman, W.; Cohen, R.; Gash, D. M.; Zhang, Z.; Chefer, S.; Matochik, J.; Lane, M. A. [Reprint Author]; Roth, G. [Reprint Author]; Mattson, M. P. [Reprint Author]; Ingram, D. K. [Reprint Author]
CS Gerontology Research Center, Natl Inst On Aging (NIH), Baltimore, MD, USA
SO Society for Neuroscience Abstract Viewer and Itinerary Planner, (2002) Vol. 2002, pp. Abstract No. 194.2. http://sfn.scholarone.com. cd-rom. Meeting Info.: 32nd Annual Meeting of the Society for Neuroscience. Orlando, Florida, USA. November 02-07, 2002. Society for Neuroscience.
DT Conference; (Meeting)
Conference; (Meeting Poster)
Conference; Abstract; (Meeting Abstract)
LA English
ED Entered STN: 19 Jun 2003
Last Updated on STN: 19 Jun 2003
AB Rodent studies have demonstrated neuroprotective effects of caloric restriction (CR) in models relevant to the pathogenesis of Alzheimers and Parkinsons diseases and stroke. CR also induces neurogenesis. Beneficial effects of CR in the brain may result from induction of a mild stress response resulting in the upregulation of neurotrophic factors and chaperon proteins. To determine the relevance of these findings to humans, we are investigating the impact of CR and dietary supplementation with the CR mimetic, 2-deoxy-D-glucose (2DG), on functional and neurochemical outcomes in a nonhuman primate model of Parkinsons disease. Twenty male rhesus monkeys (9-17 years old) were divided into three diet groups: normal diet (n=6), CR diet (n=7) and

2DG diet (n=7). Monkeys were maintained on the diets for 6 months during which time various physiological and behavioral parameters were measured. The status of dopaminergic (DA) presynaptic function in the brain was determined by positron emission topography (PET) using 6-F18-Fluoro-L-m-tyrosine (FMT). Monkeys were then injected with a single dose of the neurotoxin, MPTP (0.4 mg/kg) into the right carotid artery to induce hemi-parkinsonism. Motor functions were monitored for three months post-MPTP injections. Post-mortem brain tissues will be analyzed to determine the effects of CR and 2DG supplementation on various brain regions.

CC General biology - Symposia, transactions and proceedings 00520
Nutrition - General studies, nutritional status and methods 13202
Cardiovascular system - Physiology and biochemistry 14504
Nervous system - Physiology and biochemistry 20504
Nervous system - Pathology 20506
Toxicology - General and methods 22501

IT Major Concepts
Nervous System (Neural Coordination); Nutrition

IT Parts, Structures, & Systems of Organisms
brain: nervous system; carotid artery: circulatory system

IT Diseases
hemi-parkinsonism: nervous system disease, chemically-induced

IT Diseases
parkinsonism: nervous system disease, etiology
Parkinson Disease (MeSH)

IT Chemicals & Biochemicals
2-deoxy-glucose; M-PTP: neurotoxin

IT Methods & Equipment
caloric restriction: laboratory techniques

IT Miscellaneous Descriptors
dopaminergic presynaptic function; motor function; stress response

ORGN Classifier
Cercopithecidae 86205
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
rhesus monkey (common): male
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates, Nonhuman Primates, Primates, Vertebrates

RN 154-17-6 (2-deoxy-glucose)
28289-54-5 (M-PTP)

L52 ANSWER 3 OF 11 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 2003:269194 BIOSIS
DN PREV200300269194
TI METABOLIC AND NEUROENDOCRINE DIFFERENCES ACROSS THE 24 - HOUR DAY IN AGED CONTROL AND CALORIE - RESTRICTED MALE RHESUS MONKEYS.
AU Koegler, F. H. [Reprint Author]; Smith, L. J.; Oakes, K.; Lane, M. A.; Ingram, D.; Roth, G. S.; Mattison, J.; Tilmont, E.; Cameron, J. L. [Reprint Author]
CS Neurosci. and comma; Reproductive Sci., Oregon National Primate Research Center, Beaverton, OR, USA
SO Society for Neuroscience Abstract Viewer and Itinerary Planner, (2002) Vol. 2002, pp. Abstract No. 94.15. http://sfn.scholarone.com. cd-rom. Meeting Info.: 32nd Annual Meeting of the Society for Neuroscience. Orlando, Florida, USA. November 02-07, 2002. Society for Neuroscience.
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
Conference; (Meeting Poster)
LA English

ED Entered STN: 11 Jun 2003
Last Updated on STN: 11 Jun 2003

AB Long-term calorie restriction in many species increases lifespan and reduces the incidence of agerelated chronic diseases. Metabolic changes resulting from chronic calorie restriction may mediate some of these benefits, however studies to date have not thoroughly characterized metabolic changes across the 24 hr day in any species. Old adult male rhesus monkeys (23-28 yr), fed control diet (CON, n=6) or on 30% calorie restriction (CR, n=3) for 5-6 yr, were maintained with chronic iv catheters to allow remote collection of blood samples without disturbing the monkeys. Blood was collected for 24 hr (q 20 min) on days of normal feeding or days of fasting. Plasma glucose, insulin, cortisol, and total T3 levels were not significantly different between groups at any time on days of normal feeding or fasting. However, 3 control animals showed significantly elevated cortisol throughout the 24 hr day (AM: 347+-22 vs. 218+-17 ng/ml; PM: 290+-95 vs. 109+-9 ng/ml). There were positive correlations between mean 24 hr cortisol and glucose/insulin ratio (fed: r=0.729, p=0.026; fasted: r=0.821, p=0.0126), as well as strong negative correlations between current cortisol levels and both current body weight, and weight loss over the five year study period. This metabolic shift, encompassing an activation of the hypothalamic-pituitary-adrenal axis, a rise in plasma glucose, and weight loss may reflect late aging changes associated with increased incidence of aging-related diseases.

CC General biology - Symposia, transactions and proceedings 00520
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Sterols and steroids 10067
Biochemistry studies - Carbohydrates 10068
Metabolism - General metabolism and metabolic pathways 13002
Nutrition - General studies, nutritional status and methods 13202
Blood - Blood and lymph studies 15002
Blood - Blood cell studies 15004
Endocrine - General 17002
Endocrine - Adrenals 17004
Endocrine - Pituitary 17014

IT Major Concepts
Endocrine System (Chemical Coordination and Homeostasis); Metabolism; Nutrition

IT Parts, Structures, & Systems of Organisms
blood: blood and lymphatics; hypothalamic-pituitary-adrenal axis: endocrine system, activation; plasma: blood and lymphatics

IT Diseases
age-related disease: disease-miscellaneous

IT Chemicals & Biochemicals
cortisol; glucose; insulin; total T3 [total triiodothyronine]

IT Methods & Equipment
long-term calorie restriction: clinical techniques, therapeutic and prophylactic techniques

IT Miscellaneous Descriptors
aging process; body weight loss; feeding regulation; metabolic difference; neuroendocrine difference

ORGN Classifier
Cercopithecidae 86205
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
rhesus monkey (common): adult, male
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates, Nonhuman Primates, Primates, Vertebrates

RN 50-23-7 (cortisol)
50-99-7Q (glucose)
58367-01-4Q (glucose)
9004-10-8 (insulin)

L52 ANSWER 4 OF 11 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 2001:472164 BIOSIS
DN PREV200100472164
TI Dietary supplementation with 2-deoxy-D-glucose in rats causes no significant behavioral toxicity and attenuates kainate-induced maze learning impairment and CA3 cell loss.
AU Mamczarz, J. [Reprint author]; Guo, Z. [Reprint author]; Abdur-Rahman, L. [Reprint author]; Spangler, E. [Reprint author]; Lane, M. [Reprint author]; Roth, G. [Reprint author]; Mattson, M. P. [Reprint author]; Ingram, D. K. [Reprint author]
CS Laboratory of Neurosciences, National Institute on Aging, NIH, Baltimore, MD, USA
SO Society for Neuroscience Abstracts, (2001) Vol. 27, No. 1, pp. 276. print.
Meeting Info.: 31st Annual Meeting of the Society for Neuroscience. San Diego, California, USA. November 10-15, 2001.
ISSN: 0190-5295.
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LA English
ED Entered STN: 10 Oct 2001
Last Updated on STN: 23 Feb 2002
AB Long-term calorie restriction (CR) in rodents is a well-established intervention that increases lifespan, reduces incidence and delays onset of age-related pathology, and attenuates age-related functional declines (E. Masoro, Exp. Gerontol. 35:299, 2000). The brains of rodents maintained on CR also show greater resistance to excitotoxic, oxidative, and metabolic insults likely mediated through an upregulation of neurotrophic and stress proteins (M. Mattson, Brain Res. 886:47, 2000). We are exploring the development of CR mimetics, i.e. interventions that produce the same protective effects as CR but without the need for CR. To this end, beginning at 6 mo of age, male F344 rats received a diet supplemented with 2-deoxy-D-glucose (2DG, 0.4% w/w), a nonmetabolizable glucose analog that reduces energy availability to cells and induces a physiological state that mimics CR (M. Lane et al., J. Anti-Aging Med. 1:327, 1998). When behavioral assessment was conducted 11-13 mo later, we observed no significant differences between rats on control or 2DG diets in locomotor activity or in performance in wire hang and inclined screen tasks with improved performance on a rotarod. When rats received hippocampal injections of kainic acid (KA), we noted impaired maze learning related to neuronal loss in CA3 compared to controls; however, KA-injected rats on the 2DG diet showed significantly less maze impairment correlated with less CA3 neuronal loss. These results support further development of CR mimetics as a possible neuroprotective strategy.
CC General biology - Symposia, transactions and proceedings 00520
Cytology - Animal 02506
Behavioral biology - General and comparative behavior 07002
Behavioral biology - Animal behavior 07003
Biochemistry studies - General 10060
Pathology - Therapy 12512
Nutrition - General studies, nutritional status and methods 13202
Nervous system - Physiology and biochemistry 20504
Nervous system - Pathology 20506
Pharmacology - General 22002
Pharmacology - Psychopharmacology 22026
Toxicology - General and methods 22501

Toxicology - Pharmacology 22504
IT Major Concepts
Behavior; Nervous System (Neural Coordination); Nutrition; Pharmacology
IT Parts, Structures, & Systems of Organisms
CA3 neuron: nervous system; brain: nervous system
IT Diseases
behavioral toxicity: behavioral and mental disorders, toxicity
IT Diseases
maze-learning impairment: behavioral and mental disorders, toxicity
IT Diseases
neuronal loss: nervous system disease
IT Chemicals & Biochemicals
2-deoxy-D-glucose: nootropic-drug, dietary supplement, glucose analog, pharmacodynamics; kainate: toxin
IT Methods & Equipment
long-term caloric restriction: intervention method
IT Miscellaneous Descriptors
energy availability; locomotor activity; maze-learning; Meeting Abstract
ORGN Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
F344 rat: animal model, male
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates
RN 154-17-6 (2-deoxy-D-glucose)

L52 ANSWER 5 OF 11 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 2000:498760 BIOSIS
DN PREV200000498881
TI Slowing aging by caloric restriction in primates: What have we learned after 13 years of study?.
AU Lane, M. [Reprint author]; Ingram, D. [Reprint author]; Roth, G. [Reprint author]
CS Nutritional and Molecular Physiology Section, Laboratory of Neurosciences, National Institute on Aging, Baltimore, MD, USA
SO Journal of the American College of Nutrition, (October, 2000) Vol. 19, No. 5, pp. 690. print.
Meeting Info.: 41st Annual Meeting of the American College of Nutrition: Symposium on Advances in Clinical Nutrition. Las Vegas, Nevada, USA. October 12-15, 2000.
CODEN: JONUDL. ISSN: 0731-5724.
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LA English
ED Entered STN: 15 Nov 2000
Last Updated on STN: 10 Jan 2002
CC Biochemistry studies - Proteins, peptides and amino acids 10064
General biology - Symposia, transactions and proceedings 00520
Biochemistry studies - Carbohydrates 10068
Nutrition - General studies, nutritional status and methods 13202
IT Major Concepts
Nutrition
IT Chemicals & Biochemicals
glucose; insulin
IT Miscellaneous Descriptors
aging slowing; body temperature; caloric restriction ; Meeting Abstract

ORGN Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
human
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates
ORGN Classifier
Primates 86190
Super Taxa
Mammalia; Vertebrata; Chordata; Animalia
Organism Name
monkey
primate
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates, Nonhuman Primates, Primates, Vertebrates
RN 50-99-7Q (glucose)
58367-01-4Q (glucose)
9004-10-8 (insulin)

L52 ANSWER 6 OF 11 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 2000:354316 BIOSIS
DN PREV200000354316
TI Effects of reduced energy intake on the biology of aging: The primate model.
AU Roth, G. S. [Reprint author]; Ingram, D. K.; Black, A.; Lane, M. A.
CS National Institute on Aging, 5600 Nathan Shock Drive, Baltimore, MD, 21224, USA
SO European Journal of Clinical Nutrition, (June, 2000) Vol. 54, No. Supplement 3, pp. S15-S20. print.
CODEN: EJCNEQ. ISSN: 0954-3007.
DT Article
LA English
ED Entered STN: 16 Aug 2000
Last Updated on STN: 8 Jan 2002
AB Dietary energy restriction is the only proven method for extending lifespan and slowing aging in mammals, while maintaining health and vitality. Although the first experiments in this area were conducted over 60 y ago in rodents, possible applicability to primates has only been examined in controlled studies since 1987. Our project at the National Institute on Aging began with 3-0 male rhesus and 30 male squirrel monkeys of various ages over their respective life spans. Subsequently, it has been expanded to include female rhesus monkeys, and several other laboratories have initiated related studies. Experimental animals are generally fed 30% less than controls, and diets are supplemented with micronutrients to achieve undernutrition without malnutrition. These calorically restricted (CR) monkeys are lighter, with less fat and lean mass than controls. Bone mass is also slightly reduced, but in approximate proportion to the smaller body size. CR animals mature more slowly and achieve shorter stature than controls as well. Metabolically, CR monkeys have slightly lower body temperature and initial energy expenditure following onset of restriction, and better glucose tolerance and insulin sensitivity. The latter suggest a reduced predisposition towards diabetes as the animals age. Other potential anti-disease effects include biomarkers suggestive of lessened risk of cardiovascular disease and possibly cancer. Candidate biomarkers of aging, including the age-related decrease in plasma dehydroepiandrosterone sulfate (DHEAS), suggest that the CR animals may be

aging more slowly than controls in some respects, although sufficient survival data will require more time to accumulate. In summary, nearly all CR effects detected in rodents, which have thus far been examined in primates, exhibit similar phenomenology. Potential applicability of these beneficial effects to humans is discussed.

CC Gerontology - 24500
Biochemistry studies - Sterols and steroids 10067
Nutrition - General studies, nutritional status and methods 13202

IT Major Concepts
Aging; Nutrition

IT Chemicals & Biochemicals
dehydroepiandrosterone sulfate: plasma; insulin sensitivity; micronutrients

IT Miscellaneous Descriptors
bone mass; fat mass; glucose tolerance; lean mass; life expectancy; reduced energy intake

ORGN Classifier
Cebidae 86200
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
squirrel monkey: animal model
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates, Nonhuman Primates, Primates, Vertebrates

ORGN Classifier
Cercopithecidae 86205
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
rhesus monkey: animal model
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates, Nonhuman Primates, Primates, Vertebrates

RN 651-48-9 (dehydroepiandrosterone sulfate)

L52 ANSWER 7 OF 11 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 2000:92280 BIOSIS
DN PREV200000092280
TI Calorie restriction in nonhuman primates: Effects on diabetes and cardiovascular disease risk.
AU Lane, M. A. [Reprint author]; Ingram, D. K.; Roth, G. S.
CS Gerontology Research Center, Intramural Research Program, 5600 Nathan Shock Drive, Baltimore, MD, 21224, USA
SO Toxicological Sciences, (Dec., 1999) Vol. 52, No. 2 Suppl., pp. 41-48. print.
ISSN: 1096-6080.
DT Article
LA English
ED Entered STN: 10 Mar 2000
Last Updated on STN: 3 Jan 2002
AB The effects of calorie restriction (CR) on life span, disease, and aging in physiological systems have been documented extensively in rodent models. However, whether CR has similar effects in longer-lived species more closely related to humans remains unknown. Studies of CR and aging using nonhuman primates (rhesus monkeys) have been ongoing for several years at the National Institute on Aging and the University of Wisconsin-Madison. The majority of data published from these studies are consistent with the extensive findings reported in rodents. For example, monkeys on CR weigh less and have less body fat. Monkeys on CR also exhibit lower body temperature, fasting blood

glucose and insulin, and serum lipids. In addition, insulin sensitivity is increased in monkeys on CR. Recent efforts in the NIA study have focused on the effect of this intervention on risk factors for various age-related diseases, in particular for diabetes and cardiovascular disease. We have shown that monkeys on CR have lower blood pressure, reduced body fat, and a reduced trunk:leg fat ratio. Also, monkeys on CR have reduced triglycerides and cholesterol and have increased levels of HDL2B. Low levels of this HDL subfraction have been associated with increased cardiovascular disease in humans. In short-term studies, older (>18 years) monkeys on CR exhibit reductions in insulin and triglycerides before changes in body composition and fat distribution became evident. These and other findings have suggested that CR might have beneficial effects on certain disease risk factors independent of reductions in body weight or prevention of obesity.

CC Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Lipids 10066
Biochemistry studies - Carbohydrates 10068
Metabolism - Metabolic disorders 13020
Nutrition - General studies, nutritional status and methods 13202
Cardiovascular system - Physiology and biochemistry 14504
Cardiovascular system - Heart pathology 14506
Cardiovascular system - Blood vessel pathology 14508
Endocrine - Pancreas 17008

IT Major Concepts
Metabolism; Nutrition; Cardiovascular System (Transport and Circulation)

IT Diseases
cardiovascular disease: heart disease, vascular disease
Cardiovascular Diseases (MeSH)

IT Diseases
diabetes: endocrine disease/pancreas, metabolic disease
Diabetes Mellitus (MeSH)

IT Chemicals & Biochemicals
HDL [high density lipoprotein]; glucose: fasting levels; insulin: fasting levels; lipid: fasting levels, serum concentration; triglyceride

IT Miscellaneous Descriptors
calorie restriction: aging effects, body temperature, disease effects, life-span effects; University of Wisconsin-Madison: National Institute on Aging, educational institution

ORGN Classifier
Cercopithecidae 86205
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
rhesus monkey: nonhuman primate
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates, Nonhuman Primates, Primates, Vertebrates

RN 50-99-7Q (glucose)
58367-01-4Q (glucose)
9004-10-8 (insulin)

L52 ANSWER 8 OF 11 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 1999:141552 BIOSIS
DN PREV199900141552
TI 2-deoxy-D-glucose feeding in rats mimics physiological effects of caloric restriction.
AU Roth, G. [Reprint author]; Ingram, D. K.; Lane, M. A.
CS Natl. Inst. Aging, Gerontol. Res. Cent., 4940 Eastern Ave., Baltimore, MD 21224, USA

SO Experimental Gerontology, (Nov.-Dec., 1998) Vol. 33, No. 7-8, pp. 917-918. print.
Meeting Info.: Fourth International Symposium on the Neurobiology and Neuroendocrinology of Aging. Bregenz, Austria. July 26-31, 1998.
CODEN: EXGEAB. ISSN: 0531-5565.
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LA English
ED Entered STN: 31 Mar 1999
Last Updated on STN: 31 Mar 1999
CC Nutrition - General studies, nutritional status and methods 13202
Biochemistry studies - General 10060
Gerontology - 24500
General biology - Symposia, transactions and proceedings 00520
IT Major Concepts
Aging; Nutrition
IT Chemicals & Biochemicals
2-deoxy-D-glucose: feeding
IT Miscellaneous Descriptors
caloric restriction; lifespan; Meeting Abstract
ORGN Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
rat: Fischer 344, male
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates
RN 154-17-6 (2-deoxy-D-glucose)

L52 ANSWER 9 OF 11 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 1998:6186 BIOSIS
DN PREV199800006186
TI Caloric restriction increases HDL2 levels in rhesus monkeys (Macaca mulatta).
AU Verdery, Roy B. [Reprint author]; Ingram, Donald K.; Roth, George S.; Lane, Mark A.
CS Arizona Cent. Aging, 1821 E. Elm St., Tucson, AZ 85719, USA
SO American Journal of Physiology, (Oct., 1997) Vol. 273, No. 4 PART 1, pp. E714-E719. print.
CODEN: AJPHAP. ISSN: 0002-9513.
DT Article
LA English
ED Entered STN: 23 Dec 1997
Last Updated on STN: 23 Dec 1997
AB Caloric restriction (CR) prolongs the life of rodents and other small animals, but the benefits of CR for primates and people are as yet unknown, and mechanisms by which CR may slow aging remain unidentified. A study of rhesus monkeys, Macaca mulatta, is underway to determine if CR might prolong life span in primates and to evaluate potential mechanisms for life prolongation. Thirty rhesus monkeys in three age cohorts, restricted to 70% of ad libitum calorie intake for 6-7 yr, were compared with 30 controls. Plasma lipid, lipoprotein, and high-density lipoprotein (HDL) apolipoproteins and subfractions were measured and compared with weight, percent fat, glucose, and insulin level. CR caused decreased triglyceride levels in adult monkeys and increased levels of HDL2b, the HDL subfraction associated with protection from atherosclerosis. Multivariate statistical analyses showed that differences in lipid and lipoprotein levels occurring with CR could be accounted for, at least in part, by decreased body mass

and improved glucose regulation. These studies have used a novel dietary modification paradigm in nonhuman primates focused on calorie reduction. Results suggest that CR, as mediated by its beneficial effect on body composition and glucose metabolism, could prolong human life by decreasing the incidence of atherosclerosis.

CC Gerontology - 24500
Nutrition - General studies, nutritional status and methods 13202
Cardiovascular system - Blood vessel pathology 14508
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Lipids 10066

IT Major Concepts
Aging; Nutrition

IT Diseases
atherosclerosis: vascular disease
Arteriosclerosis (MeSH)

IT Miscellaneous Descriptors
aging; caloric restriction; high-density lipoprotein-2 levels; nutrition

ORGN Classifier
Cercopithecidae 86205
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
Macaca-mulatta [rhesus monkey]
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates, Nonhuman Primates, Primates, Vertebrates

L52 ANSWER 10 OF 11 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 1995:466639 BIOSIS
DN PREV199598480939
TI Biological basis of lifespan modulation by nutrition: The NIA primate study.
AU Roth, George S.; Ingram, Donald K.; Cutler, Richard G.; Lane, Mark A.
CS Gerontology Res. Cent., National Inst. Aging, Francis Scott Key Med. Cent., Baltimore, MD 21224, USA
SO Dall, J. L. C. [Editor]; Ermini, M. [Editor]; Herrling, P. L. [Editor]; Meier-Ruge, W. [Editor]; Stahelin, H. B. [Editor]; Staufenbiel, M. [Editor]. (1995) pp. 57-71. The 1994 Sandoz lectures in gerontology: Adaptations in aging.
Publisher: Academic Press Ltd., 14 Belgrave Square, 24-28 Oval Road, London NW1 7OX, England, UK; Academic Press, Inc., 1250 Sixth Ave., San Diego, California 92101, USA.
Meeting Info.: Sandoz Lectures in Gerontology. Basel, Switzerland. 1994.
ISBN: 0-12-241590-6.
DT Book
Conference; (Meeting)
Book; (Book Chapter)
Conference; (Meeting Paper)
LA English
ED Entered STN: 1 Nov 1995
Last Updated on STN: 1 Nov 1995
CC General biology - Symposia, transactions and proceedings 00520
Biochemistry studies - Lipids 10066
Biochemistry studies - Carbohydrates 10068
Biochemistry studies - Minerals 10069
Biophysics - Bioenergetics: electron transport and oxidative phosphorylation 10510
Metabolism - Energy and respiratory metabolism 13003

Metabolism - Carbohydrates 13004
Metabolism - Lipids 13006
Metabolism - Minerals 13010
Nutrition - General studies, nutritional status and methods 13202
Nutrition - Malnutrition and obesity 13203
Nutrition - Prophylactic and therapeutic diets 13218
Bones, joints, fasciae, connective and adipose tissue - Physiology and biochemistry 18004
Gerontology - 24500.
Development and Embryology - Morphogenesis 25508
IT Major Concepts
Aging; Development; Metabolism; Nutrition; Skeletal System (Movement and Support)
IT Chemicals & Biochemicals
GLUCOSE
IT Miscellaneous Descriptors
BONE MINERAL CONTENT; BOOK CHAPTER; CALORIC RESTRICTION; ENERGY METABOLISM; FAT CONTENT; GLUCOSE DYNAMICS; LEAN BODY MASS; MATURATION EFFECTS; MEETING PAPER; NATIONAL INSTITUTE ON AGING
ORGN Classifier
Cebidae 86200
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
Saimiri sciureus
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates, Nonhuman Primates, Primates, Vertebrates
ORGN Classifier
Cercopithecidae 86205
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
Macaca mulatta
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates, Nonhuman Primates, Primates, Vertebrates
RN 50-99-7Q (GLUCOSE)
58367-01-4Q (GLUCOSE)

L52 ANSWER 11 OF 11 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation on STN
AN 1995:316214 BIOSIS
DN PREV199598330514
TI Diet restriction in rhesus monkeys lower fasting and glucose-stimulated glucoregulatory end points.
AU Lane, Mark A. [Reprint author]; Ball, Sheldon S.; Ingram, Donald K.; Cutler, Richard G.; Engel, Jeanne; Read, Virginia; Roth, George S.
CS Mol. Physiol. Genetics Sect., Gerontol. Res. Cent., Natl. Inst. Aging, Natl. Inst. Health, 4940 Eastern Ave., Baltimore, MD 21224, USA
SO American Journal of Physiology, (1995) Vol. 268, No. 5 PART 1, pp. E941-E948.
CODEN: AJPHAP. ISSN: 0002-9513.
DT Article
LA English
ED Entered STN: 30 Jul 1995
Last Updated on STN: 30 Jul 1995
AB Male rhesus monkeys (Macaca mulatta) of different age groups representing the species life span were fed ad libitum or a 30% reduced calorie diet over a 7-yr period. During the first 2-3 yr of this longitudinal

study, glucose and insulin levels were not altered by diet restriction (DR). However, reductions in fasting blood glucose became apparent in DR animals after 3-4 yr. At the end of the 6th yr of study, glycated hemoglobin was measured, and intravenous glucose tolerance tests (IVGTTs) were conducted. Maximum glucose levels reached during IVGTTs increased with age but were lower in DR animals compared with controls. Several measures of the insulin response (baseline, maximum, and integrated areas under curve) increased with age and were lower in DR monkeys. With the exception of glycated hemoglobin, which was not different in monkeys subjected to DR, these findings confirm previous studies in rodents demonstrating that DR alters glucose metabolism and may be related to the antiaging action of this intervention.

CC Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Porphyrins and bile pigments 10065
Biochemistry studies - Carbohydrates 10068
Metabolism - Energy and respiratory metabolism 13003
Metabolism - Carbohydrates 13004
Endocrine - Pancreas 17008
Gerontology - 24500

IT Major Concepts
Aging; Endocrine System (Chemical Coordination and Homeostasis); Metabolism

IT Chemicals & Biochemicals
GLUCOSE; INSULIN

IT Miscellaneous Descriptors
AGING; ENERGY METABOLISM; GLUCOSE METABOLISM; HEMOGLOBIN; INSULIN

ORGN Classifier
Cercopithecidae 86205
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
Macaca mulatta
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Mammals, Nonhuman Vertebrates, Nonhuman Primates, Primates, Vertebrates

RN 50-99-7Q (GLUCOSE)
58367-01-4Q (GLUCOSE)
9004-10-8 (INSULIN)

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